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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/657,272	09/07/2000	Toru Matama	Q58745	9969
23373	7590	02/12/2004	EXAMINER	
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			MILLER, RYAN J	
			ART UNIT	PAPER NUMBER
			2621	

DATE MAILED: 02/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/657,272

Applicant(s)

MATAMA, TORU

Examiner

Ryan J. Miller

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 September 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

1. The amendment received on November 17, 2003 has been entered in full. An updated search led to the discovery of pertinent prior art. Therefore, this action is non-final.

Response to Arguments

2. Applicant's arguments filed November 17, 2003 have been fully considered but they are not persuasive.

Drawing Objections

Summary of Argument: The applicant argues that the objections to the drawings should be withdrawn in light of the amendments to the specification and the substitute drawing.

Examiner's Response: The examiner agrees. The objection to the drawings has been withdrawn.

Specification Objections

Summary of Argument: The applicant has amended the specification to correct the specific informalities presented by the examiner in the objection.

Examiner's Response: The examiner agrees. The objection to the specification has been withdrawn.

35 U.S.C. 112, Second Paragraph Rejections

Summary of Argument: The applicant argues that the amended claims overcome the indefiniteness asserted by the examiner (see applicant's remarks: page 14, paragraph 2).

Examiner's Response: While the examiner agrees that the amendments to claims overcome the specific problems recited by the examiner in the office action, the claims are still

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replete with difficult and indefinite language and need a complete review. The problems with the claims will be described below.

Prior Art Rejections

35 U.S.C. 102(b) rejections

Summary of Argument: The applicant argues, with regard to claims 1 and 17, that Poetsch (GB 2140245 A) fails to disclose detecting at least one of a foreign matter which adheres and a scratch which exists in the optical path of the visible light based on continuity of change of light quantity data of the thus read specified detecting light (see applicant's remarks: page 15, paragraph 2). Regarding claim 17, applicant further argues that claim 17 defines two reading units separately provided. This element is absent from Poetsch (see applicant's remarks: page 16, paragraph 4).

Examiner's response: Applicant's arguments with respect to the 35 U.S.C. 102(b) rejections have been considered but are moot in view of the new ground(s) of rejection.

35 U.S.C. 103(a) rejections

Summary of Argument: With regard to claim 33, the applicant argues that the combination of Poetsch and Sugiura et al. (U.S. Patent No. 6,034,766 A) fails to disclose the first detecting step of detecting a first optical defect existing in an optical system, which reads the image data from the image recording medium. More specifically, Sugiura et al. fails to disclose an optical system, which reads the image data from the image-recording medium. The applicant further argues that there is no teaching or suggestion to combine the references and that the examiner's asserted motivation to combine the references appears to be nothing more than impermissible hindsight reconstruction based on the applicant's disclosure.

Examiner's response: The examiner disagrees. First of all, Sugiura et al. is used only as a teaching of detecting an optical defect existing in an optical system. Poetsch discloses an optical system that reads image data from an image-recording medium. Therefore, Sugiura et al. meets this limitation as discussed in the previous action. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-38 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

There are a number of problems with the claims that render them indefinite. These problems are mostly grammatical in nature and seem to be caused by errors in the translation. A few examples of these errors are presented below; however, the examiner requests a complete review and revision of the claims to adjust for all of the errors in the claims.

Regarding claim 2, the claim language "when said change of the thus read light quantity data is detected in a continuous state in said one dimensional direction at a specified reading

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position perpendicular to said one-dimensional direction, at least one of foreign matter and scratch is detected” is grammatically awkward and difficult to understand. Clarification of this issue is required.

Regarding claims 3 and 19, the claim language “detecting the change of the light quantity data in a line shape in a same sensor position by means of a line sensor” is grammatically awkward and difficult to understand. What is meant by “in a line shape in a same sensor position by means of a line sensor” Clarification of these phrases is required.

Regarding claims 4 and 20, the claim language “in a case of the scanning for the reading by means of transferring said image recording medium in relation to said line sensor” is difficult to understand. The examiner is uncertain of the meaning of the limitation “in a case of the scanning for the reading”. To what “scanning” is this claim referring? To what “reading” is this claim referring? Clarification of this issue is required.

Regarding claim 15, the claim language “when said visible light is read by scanning in light” is grammatically awkward and difficult to understand. Where is light scanned in? Clarification of this issue is required.

Regarding claims 14 and 30, the claim recites the limitation "the invisible light" in line 3. There is insufficient antecedent basis for this limitation in the claim. Clarification is required.

Regarding claim 19, the claim recites the limitation "said line sensor" in line 3. There is insufficient antecedent basis for this limitation in the claim. Clarification is required.

These are only examples of the overall problems with the claims. A proper response to this office action will include a complete review of the claims for any other deficiencies, not merely a correction of the problems mentioned above.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 2, 6, 10-14, 17, 18, 22, 26-30, 36, and 37 are rejected under 35 U.S.C. 102(b) as being anticipated by LeCouteur (GB 1 547 811).

As applied to claim 1, LeCouteur discloses an image reading method which reads an image on an image recording medium by a visible light, comprising the steps of: reading a specified detecting light by scanning the specified detecting light in a one-dimensional direction using an optical path of said visible light (see Fig. 1: As can be seen from the figure, there is a source A of both visible light and infra-red light (i.e. specified detecting light). The infra-red light, after being scanned in a one-dimensional direction using the same optical path as the visible light, is read by sensor F.); and detecting at least one of a foreign matter which adheres and a scratch which exists in the optical path of said visible light based on continuity of change of light quantity data of the thus read specified detecting light in said one-dimensional direction (see page 2, lines 3-13: The reference describes that a scratch on the film (i.e. a scratch which exists on the optical path of the visible light since the film is in the optical path) is detected when the high, approximately constant signal detected at sensor F is changed to a lower level due to the infra-red radiation being scattered or absorbed by the imperfection (i.e. based on continuity

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of change of light quantity data of the thus read specified detecting light in said one-dimensional direction).).

As applied to claim 2, LeCouteur discloses that when the change of the thus read light quantity data is detected in a continuous state in said one-dimensional direction at a specified reading position perpendicular to said one-dimensional direction, at least one of said foreign matter and scratch is detected (see Fig. 1 and page 1, lines 73-76: The reference describes that the film C moves between two spools. Therefore, continuous state detection is performed. Also, as can be seen from the figure, the reading position F is perpendicular to the one-dimensional direction).).

As applied to claim 6, LeCouteur discloses the step of issuing an alarm, when at least one of the foreign matter which adheres or the scratch which exists in said optical path is detected (see page 2, lines 27-39: The reference describes that when an imperfection exists in the film (i.e. the optical path) a signal (i.e. an alarm) is issued from pulse shaper U to the switch S so that a substitute picture can be selected).).

As applied to claim 10, LeCouteur discloses an area in which at least one of the foreign matter which adheres or the scratch which exists in said optical path is detected is enlarged (see page 2, lines 58-68: The reference describes that when an imperfection is found, the signal is extended electronically in the horizontal direction and in the vertical direction (i.e. the area is enlarged).).

As applied to claim 11, LeCouteur discloses that the specified detecting light is visible light (see page 1, lines 71-73: The reference describes that source A emits visible light).).

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As applied to claim 12, LeCouteur discloses that when said visible light is read by scanning in said one-dimensional direction by making use of the optical path of said visible light, said image recording medium is removed from the optical path of said visible light (see Fig. 1: The reference discloses that after the film (i.e. image recording medium) is sent through the film scanning apparatus in the direction provided by the arrow, it is removed from the optical path of the visible light since all of the film will be on spool C₂).

As applied to claim 13, LeCouteur discloses that the specified detecting light is an invisible light (see page 1, lines 71-73: The reference describes that source A emits infra-red radiation, which is invisible light.).

As applied to claim 14, LeCouteur discloses that at least one of the foreign matter and the scratch on said image recording medium is detected by the invisible light (see page 2, lines 6-12: The reference describes that infra-red radiation (i.e. invisible light) is used to detect imperfections in the film (i.e. image recording medium).).

As applied to claim 36, LeCouteur discloses irradiating an image-bearing portion of the recording medium simultaneously with reading by scanning the detecting light onto the image-bearing portion (see Fig. 1, As can be seen from the figure, the image bearing portion of the recording medium C is irradiated with light source A simultaneously with the reading of the detecting light at sensor F.).

As applied to claims 17, 18, 22, 26-30, and 37, which merely call for an apparatus for performing the method of claims 1, 2, 6, 10-14, and 36, LeCouteur discloses such an apparatus as can be seen in Fig. 1.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 3-5 and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of LeCouteur (GB 1547811 A) and Poetsch (GB 2140245 A). The arguments as to the relevance of LeCouteur in the rejection of claim 1 above are incorporated herein.

As applied to claim 3, LeCouteur discloses that at least one of the foreign matter which adheres and the scratch which exists in said optical path is detected by detecting the change of the light quantity data in a line shape in a same sensor position by means of a sensor for said specified detecting light (see page 2, lines 3-13: The reference describes that a scratch on the film (i.e. a scratch which exists on the optical path of the visible light since the film is in the optical path) is detected when the high, approximately constant signal detected at sensor F is changed to a lower level due to the infra-red radiation being scattered or absorbed by the imperfection (i.e. based on continuity of change of light quantity data of the thus read specified detecting light in said one-dimensional direction).).

As applied to claim 4, LeCouteur discloses that scanning in said one-dimensional direction for reading said specified detecting light by making use of the optical path of said visible light is performed by allowing said image recording medium and said sensor to move relatively by means of transferring said image recording medium in relation to said sensor (see Fig. 1: As can be seen in the figure, the film C moves in the direction of the arrow shown in Fig.

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1. Therefore, the image recording medium (i.e. the film) is transferred (i.e. moved) in relation to the sensor (i.e. F in Fig. 1).).

As applied to claim 5, LeCouteur discloses that scanning in said one-dimensional direction for reading said specified detecting light by making use of the optical path of said visible light is performed by allowing said image recording medium or said specified detecting light and said sensor to move relatively by means of scanning by transferring a mirror in said optical path (see Fig. 1: As can be seen in the figure, the film moves in the direction shown by the arrow and is scanned by the light which reflects off of the dichroic mirror E. This mirror E is clearly in the optical path.)

Claims 3-5 also call for the use of a line sensor. While LeCouteur describes that the sensor F can be a solid-state image sensor (see page 2, line 6). The reference does not specifically state the use of a line sensor. However, Poetsch, in the same field of endeavor of cine film scanners, and the same problem solving area of defect detection, describes the use of line sensors (see page 1, line 126 – page 2, line 2).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify LeCouteur by adding the use of line sensors as taught in Poetsch because a line sensor is an inexpensive, small and light-weight image sensor that provides high image quality.

As applied to claims 19-21, which merely call for an apparatus for performing the method of claims 3-5, LeCouteur, in combination with the apparatus shown in Fig. 2 of Poetsch, discloses such an apparatus as can be seen in Fig. 1.

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9. Claims 7-9, 15, 16, 23-25, 31-35 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of LeCouteur (GB 1547811 A) and Sugiura et al. (U.S. Patent No. 6,034,766 A). The arguments as to the relevance of LeCouteur in the rejection of claims 1, 14, 17, and 30 above are incorporated herein.

Claim 7 calls for the step of determining if foreign matter adheres to or a scratch exists on an optical element in the optical path. This element is absent from LeCouteur; however, Sugiura et al., in the same problem solving area of optical defect detection, discloses an apparatus that determines if a scratch or particle is on an optical element (see column 11, line 65 – column 12, line 9: The reference describes that if an optical member (i.e. optical element) has a defect, such as a scratch or a particle of dust, the light is diffused and a different light pattern than expected is determined by the line sensor. Therefore, the system will know that a defect exists and send a signal to the operator.). Claim 8 further specifies that the optical element is a mirror. LeCouteur discloses that the optical element is a mirror (see Fig. 1: The reference discloses a dichroic mirror E.).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify LeCouteur by adding the step of determining if foreign matter adheres to or a scratch exists on an optical element in the optical path as taught by Sugiura et al. because such a determination allows for the system to detect if the defect exists in the actual image recording medium or if the defect exists in the imaging system. Therefore, the system will save time and lower costs since the operator will be able to easily determine if the film is defective due to a scratch or if the actual scanner is defective.

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Claim 9 calls for the position of the optical element to be changed in accordance with a detection result of at least one of the foreign matter and the scratch which adheres to or exists on the optical element in said optical path. LeCouteur fails to disclose this element; however Sugiura et al. discloses changing the position of the optical element based on the detection result (see column 9, lines 44-47: The reference discloses that the a slide table unit is used to move the optical member (i.e. optical member) based on data output from the line sensor (i.e. detection result).).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify LeCouteur by adding the ability to change the position of the optical member based on the detection result as taught in Sugiura et al. because such an ability allows the system to automatically diminish errors in the scanning system caused by scratches or dust particles on the actual optical elements in the system. This will, therefore, reduce false detections and increase the overall effectiveness of the system.

Claim 15, which is representative of claim 16, calls for changing the focusing position of the detecting light. Such a focusing element is absent from LeCouteur, but is disclosed in Sugiura et al. (see column 9, lines 17-19: The reference describes that the imaging lens can be used to focus with respect to the line sensor.).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify LeCouteur by adding the focusing capabilities taught in Sugiura et al. because the ability to focus the image allows for the best and most accurate detection of scratches and foreign matter.

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As applied to claims 23-25, 31, and 32, which merely call for an apparatus for performing the method of claims 7-9, 15, and 16, LeCouteur, in combination with the apparatus shown in Fig. 5 of Sugiura et al., discloses such an apparatus as can be seen in Fig. 1.

As applied to claim 33, LeCouteur discloses a method of discriminating a defect of image data produced from an image which has been formed on an image recording medium, comprising: an optical system which reads said image data from said image recording medium (see Fig. 1: This is a figure of an optical system that reads image data from the film C (i.e. image recording medium).); a second detecting step of detecting a second optical defect existing on said image recording medium (see page 2, lines 3-13: The reference describes that a scratch on the film (i.e. a second optical defect existing on said image recording medium) is detected when the high, approximately constant signal detected at sensor F is changed to a lower level due to the infra-red radiation being scattered or absorbed by the imperfection.).

As applied to claim 34, LeCouteur discloses using an invisible light (see page 1, lines 71-73: The reference describes that source A emits infra-red radiation, which is invisible light.).

As applied to claim 38, LeCouteur discloses irradiating an image-bearing portion of the recording medium simultaneously with reading by scanning the detecting light onto the image-bearing portion (see Fig. 1, As can be seen from the figure, the image bearing portion of the recording medium C is irradiated with light source A simultaneously with the reading of the detecting light at sensor F.).

LeCouteur does not teach a first detecting step of detecting a first optical defect existing in an optical system. Sugiura et al. discloses such a first detecting step (see column 11, line 65 – column 12, line 9: The reference describes that if an optical member (i.e. optical system) has a

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defect, such as a scratch or a particle of dust, the light is diffused and a different light pattern than expected is determined by the line sensor. Therefore, the system will know that a defect exists and send a signal to the operator (i.e. a first detecting step).).

As applied to claim 35, Sugiura discloses a step of focusing the position of the light based on the detection results (see column 9, lines 17-19: The reference describes that the imaging lens can be used to focus with respect to the line sensor.).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify LeCouteur by adding first detecting step of detecting a first optical defect existing in an optical system as taught by Sugiura et al. because the system of Sugiura et al. allows for “an inspection apparatus capable of judging the quality of an optical member in accordance with an objective criterion, and preferably of being inspected rapidly and reliably” (see Sugiura et al.: column 1, lines 54-58). Such a determination allows for the system to accurately detect if the defect exists in the imaging system, instead of the actual film. Therefore, the system will save time and lower costs since the operator will be able to easily determine if the film is defective due to a scratch or if the actual scanner is defective.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ryan J. Miller whose telephone number is (703) 306-4142. The examiner can normally be reached on M-F 8:00-4:30.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo H. Boudreau can be reached on (703) 305-4706. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4750.


Ryan J. Miller

Ryan J. Miller
Examiner
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LEO BOUDREAU
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